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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/648,881	08/27/2003	Robert L. Koelzer	01925-P0216A	4884

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EXAMINER

GILLAN, RYAN P

ART UNIT	PAPER NUMBER
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3746

DATE MAILED: 07/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/648,881

Applicant(s)

KOELZER ET AL.

Examiner

Ryan P. Gillan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12/22/03, 12/28/04</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2 and 4-12 rejected under 35 U.S.C. 102(b) as being anticipated by Enomoto et al. (5,709,535). Enomoto et al. teach a valve assembly, comprising: a housing (1,2); a pump mechanism (12) disposed in said housing; a first plate (125) mounted adjacent to said pump mechanism, said first plate having at least one aperture (125b) and at least one flexing flap (125a); a second plate (127) mounted adjacent to said first plate, said second plate having at least one aperture (127b) and at least one flexing flap (127a); wherein said first and second plates are aligned such that the at least one aperture in said first plate is located adjacent the at least one flexing flap in said second plate and the at least one aperture in said second plate is located adjacent the at least one flexing flap in said first plate (clearly seen in figure 7); wherein said second plate includes a plurality of the at least one flexing flaps, and wherein each of the plurality of the at least one flexing flaps open into the discharge channel (clearly seen in figures 3 and 7); a compressor head (229) mounted adjacent to said second plate, said compressor head having a discharge channel into which the at least one flap of said second plate opens (clearly seen in figure 3); and at least one outlet port (229a) in compressor head for discharging fluid that has passed through said plates (col.5 line

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61 - col. 6 lines 1-14); at least one inlet port (229b) in said compressor head for introducing fluid to be passed through said plates; wherein: said at least one aperture in said first plate comprises a plurality of apertures located along the inner periphery of said first plate; and the at least one aperture in said second plate comprises a plurality of apertures located along the outer periphery of said second plate (clearly seen in figure 6); wherein: said at least aperture in said first plate comprises a plurality of apertures located along the outer periphery of said first plate; and the at least one aperture in said second plate comprises a plurality of apertures located along the inner periphery of said second plate (clearly seen in figure 6); wherein said pump mechanism comprises a compressor (Abstract); wherein: said housing comprises a first portion (2) and a second portion (1); the first portion comprises a cylinder block (clearly seen in figure 3) having at least one piston channel (11); the second portion comprises a swash plate housing (2); and said pump mechanism comprises a swash plate (8) disposed in said swash plate housing and at least one piston (12) coupled to said swash plate and slidably disposed in the at least one piston channel (clearly seen in figure 3); further comprising a drive shaft (7) disposed in said cylinder block and said swash plate housing, wherein said swash plate is mounted on said shaft (clearly seen in figure 3); a first fluid pathway defined when the at least one flexing flap of said second plate is disposed against the at least one aperture of said first plate and the at least one flexing flap of said first plate is biased away from the at least one aperture of said second plate, in which fluid flows through said inlet port, through the at least one aperture in said second plate, past the at least one flexing flap in the first plate, and into said housing

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(clearly seen in figure 6, col. 8 line 54 - col. 9 line 13); and a second fluid pathway defined when the at least one flexing flap of said first plate is disposed against the at least one aperture of said second plate and the at least one flexing flap of said second plate is biased away from the at least one aperture of said first plate, in which fluid flows from said housing, through the at least one aperture in said first plate, past the at least one flexing flap in the second plate, and out said outlet port (clearly seen in figure 6, col. 8 line 54 - col. 9 line 13); in which fluid flows through said inlet port and into said swash plate chamber, through the passageway, into said cover, through the at least one aperture in said second plate, past the at least one flexing flap in the first plate, and into the piston channel (clearly seen in figures 3 and 6, col. 8 line 54 - col. 9 line 13); and a second fluid pathway defined when the at least one flexing flap of said first plate is disposed against the at least one aperture of said second plate and the at least one flexing flap of said second plate is biased away from the at least one aperture of said first plate, in which fluid flows from the piston channel, through the at least one aperture in said first plate, past the at least one flexing flap in the second plate, and out said outlet port (clearly seen in figures 3 and 6, col. 8 line 54 - col. 9 line 13); a cover (6) adjacent to said second plate; at least one inlet port clearly seen in figure 3) in said cover for introducing fluid that is to be passed through said plates; at least one outlet (24) port in said cover for discharging fluid that has passed through said plates.

3. An actuator is inherently mounted on a drive shaft for exerting a force on a swash plate in a reciprocating compressor and therefore despite the nondisclosure of Enomoto et al. with regard to an actuator attached to the drive shaft, it would be an inherent part

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of the disclosed compressor (extrinsically evidenced in Terauchi (5,259,736) col. 3 lines 23-40).

3. Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Enomoto et al. in view of Terauchi (5,259,736). Enomoto et al. teach all of the limitation cited above, but fail to explicitly teach an actuator mounted on the shaft for exerting force on the swash plate.

6. Terauchi teaches an actuator (31) mounted on a shaft (24) for exerting force on the swash plate (27). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Enomoto et al. to incorporate the actuator taught by Terauchi as a means of regulating the pressure of the gas in the compression chamber (col. 3 lines 23-40).

7. Claims 3 and 14-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Enomoto et al. in view of Ota et al. (6,434,956). Enomoto et al. teach all of the above cited limitations, but fail to teach a central processing unit; and a solenoid for closing said at least one outlet port in response to an actuation signal from said central processing unit; wherein the actuation signal is an on-demand signal from a driver; wherein the actuation signal is generated in response to said central processing unit

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receiving a load signal indicative of an engine load exceeding a predetermined value; wherein the actuation signal is generated in response to said central processing unit receiving a pressure signal indicative of an air pressure exceeding a predetermined value.

8. Ota et al. teach an inlet port (28) in said housing (1) for introducing fluid to be passed through said plates; a central processing unit (60); and a solenoid (CV3) for closing said at least one outlet port in response to an actuation signal from said central processing unit (col. 21 lines 16-29); wherein the actuation signal is an on-demand signal from a driver (col. 21 lines 16-29); wherein the actuation signal is generated in response to said central processing unit receiving a load signal indicative of an engine load exceeding a predetermined value (col. 9 lines 5-17); wherein the actuation signal is generated in response to said central processing unit receiving a pressure signal indicative of an air pressure exceeding a predetermined value (col. 18 lines 48-55).

9. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the compressor as taught by Enomoto et al. to incorporate the inlet port in the housing taught by Ota et al. as a means of more easily adjusting the flowrate of gas from the discharge chamber to the crank chamber (col. 6 lines 46-48). It would also have been obvious to one of ordinary skill in the art at the time of the invention to modify the compressor as taught by Enomoto et al. to incorporate the central processing unit and solenoid system taught by Ota et al. as a means of rapidly changing the displacement of the compressor thereby stabilizing the temperature of a vehicle

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passenger compartment and be quickly changed to secure engine power (col. 2 lines 20-27).

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- Kawai et al. (4,911,614) teach a piston type compressor provided with a valve assembly structure for reducing noise.
- Kawai et al. (4,730,987) teach a variable delivery compressor with a central processing unit controlling the inlet and outlet.
- Iijima et al. (4,715,790) teach a compressor with multiple valve plates with apertures and flexible flaps.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ryan P. Gillan whose telephone number is 571-272-8381. The examiner can normally be reached on 8:30 am - 5:00 pm; Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Thorpe can be reached on 571-272-4444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RPG



TAE JUN KIM
PRIMARY EXAMINER